

**Remarks**

Favorable reconsideration of this application in light of the following remarks is respectfully requested. Claims 1 and 10 have been amended to require that the format used for a given interrogation signal portion is determined by the transceiver in dependence on modulated responses from the tags to said given interrogation signal portion. For support in the specification, see page 6, line 16 to page 7, line 12.

**35 USC 103(a)**

Claims 1, 4-6, 8-17 and 23 stand rejected under 35 USC 103 (a) as unpatentable over Denne et al. (US 4 691 202, "Denne") in view of Dodd (US 5 339 073, "Dodd"), in in view of Walter et al. (US 5 856 788, "Walter"), and further in view of Palmer (US 5 942 977, "Palmer"). Claims 2-3 stand rejected under 35 USC 103 (a) as unpatentable over Denne in view of Dodd, Walter, Palmer and further in view of Wood, Jr. (US 6 466 771, "Wood"). Claim 7 stands rejected under 35 USC 103 (a) as unpatentable over Denne in view of Dodd, Walter, Palmer and further in view of Pidwerbetsky et al. (US 6 046 683, "Pidwerbetsky"). Claims 18-20 and 22 stand rejected under 35 USC 103 (a) as unpatentable over Dodd in view of Walter and Palmer.

As previously presented, independent claims 1 and 10 relate to a system in which the length of an interrogation pulse varies in dependence on the responses received, with two possible pulse lengths. These two possible interrogation pulse lengths are the MW-0 modulation window and the MW-1 modulation window shown in Figure 2.

The examiner has recognised that Denne in view of Dodd and further in view of Walter fails to disclose pulses of an interrogation signal, the pulses having different durations. The examiner has also recognised that Palmer represents a "conventionally used pulse modulation scheme".

Palmer indeed discloses a transmitter which uses pulse width modulation, with a 0 represented by a 25% duty cycle and a 1 represented by a 75% duty cycle. The transmitter is used in an RFID tag. However, there is no teaching in Palmer of an interrogation signal having a pulse width form, nor of an interrogation signal which varies in dependence on responses received.

The teaching of Palmer is simply that pulse width modulation can be used for data transmission. This is of course well known. This is of no relevance at all to the issue of creating an efficient way to interrogate the tags within an RFID system.

It is not clear how one of ordinary skill in the art could use the teaching of Palmer to modify the teachings of Denne, Dodd and Walter to provide an interrogation signal which is formed from pulses which vary in duration in dependence on responses received during interrogation. "A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field." *In re Kotzab*, 217 F. 3d 1365, 1369, 55 USPQ 2d 1313 (Fed. Cir. 2000).

The examiner has considered that the feature of varying the interrogation signal format in dependence on responses received is taught by Dodd. Instead, Dodd teaches that interrogation words change in response to replies received, and there is no disclosure in Dodd of individual portions of an interrogation signal being varied in dependence on responses received. Dodd discloses an approach by which an interrogation word is made progressively longer until a single tag can be identified.

The examiner has provided no indication of how one of ordinary skill in the art would combine this teaching with the knowledge (from Palmer) that pulse width modulation is suitable for data transmission, to arrive at a system in which the format for each portion of an interrogation signal, in the form of pulses having different

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durations, is determined based on the responses received. The claims provide an interrogation scheme which adapts portion-by-portion as the interrogation signal progresses, with each successive portion associated with a predetermined bit or bit sequence of the tag identification words.

None of the prior art relied upon uses interrogation signals of two different durations, in dependence on the responses received.

In order to distinguish even more clearly over the cited art, claims 1 and 10 have been amended to clarify that the format used for a given interrogation signal portion is determined by the transceiver in dependence on modulated responses from the tags to said given interrogation signal portion. Thus, the format used is determined in real time based on the (initial) response received to that same signal portion. This provides an adaptive interrogation signal which responds to responses received.

Since neither Palmer nor any of the other cited references teach or suggest the format used for a given interrogation signal portion being determined by the transceiver in dependence on modulated responses from the tags to said given interrogation signal portion, their combination certainly cannot do so. Accordingly, independent claims 1 and 10 are patentable over the cited art.

Claims 18-22 are rejected in the Final Office Action under USC 103 (a) as being unpatentable over Dodd in view of Walter and further in view of Palmer.

No amendments have been made to independent claim 18, as this claim already recites that the decision of whether not to use the long format for a given interrogation signal portion depends on the responses received to the initial, shorter, format. The comments above thus apply equally to method claims 18 in its previous form.

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As previously presented, the invention provides a system which enables individual tags to be identified with one interrogation signal, and which allows the tags to change state in response to the interrogation signal itself, thereby simplifying the procedure for placing tags into a quiescent mode.

The system of the invention enables very high efficiency of the interrogation procedure. Once a response is received to the shorter interrogation signal portion, the portion can end (without converting to the longer duration pulse), and the interrogation signal can proceed to interrogation of the next bit. This provides an efficient and high speed identification of individual tags.

There is no disclosure of this adaptive nature of the duration of the interrogation signal portions in any of the prior art relied upon, including newly cited Palmer.

The above arguments are limited to the independent claims, and detailed arguments are not presented in respect of the dependent claims. However, the arguments of the Examiner should not be taken to be accepted.


In view of the arguments and amendments above, we submit that this application is in order for allowance. Such action is therefore solicited.

Applicant believes that no extension of time is required; however, this conditional petition is being made to provide for the possibility that the applicant has inadvertently overlooked the need for an extension of time. If any additional fees are required for the timely consideration of this application, please charge deposit account number 19-4972.

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The Examiner is requested to telephone the undersigned if any matters remain outstanding so that they may be resolved expeditiously.

Respectfully submitted,

  
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